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Protect Yourself

There are several ways for you to treat raw water to make it safe to drink. The most certain treatment to destroy giardia is to boil water for at least 1 minute. Boiling also will destroy other organisms causing waterborne disease. At high altitudes, you should maintain the boil for 3 to 5 minutes for an added margin of safety.

Chemical disinfectants such as iodine or chlorine tablets or drops are not yet considered as reliable as heat in killing giardia, although these products work well against most waterborne bacteria and viruses that cause disease. The amount of iodine or chlorine necessary to kill giardia depends on water temperature, pH, turbidity, and contact time between the chemical and the parasite. Until current research determines the right amount of chemical and duration of contact time that will work against giardia under a variety of water conditions, chemicals cannot be recommended for routine disinfection of water for giardia. In an emergency where chemical disinfection is necessary, use an iodine-based product, since iodine is often more effective than chlorine. If possible, filter or strain the water first, and then allow the iodine to work at least 30 minutes before you drink the water. If the water is cold or cloudy, wait at least an hour, or use more iodine.

For short trips, take a supply of water from home or other domestic source.

Protect Others

Giardia can be readily transmitted between humans and animals. Feces (human or animal waste) can contain the organism. Waste should be buried 8 inches deep and at least 100 feet away from natural waters.

Dogs, like people, can get infected with giardiasis. Unless they are carefully controlled, dogs can contaminate the water and continue the chain of infection from animals to humans. For this reason, their inclusion in your travel plans should be carefully considered.

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Is The Water Safe?

Think Before You Drink

United States Department of Agriculture

Forest Service

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A Hidden Hazard

We hope your visits to your National Forests will be enjoyable, and they will be if you avoid hazards that may be encountered in the great outdoors. One hidden hazard you should know about is a disease that may be contracted from drinking untreated "natural" water. The disease is an intestinal disorder called GIARDIASIS (gee-ar-*dye*-a-sis). It can cause you severe discomfort.

The disease is caused by a microscopic organism, *Giardia lamblia*. The cystic form of giardia may be found in mountain streams and lakes. These natural waters may be clear, cold, and free-running. They can look, smell, and taste good. You may see wildlife drinking without hesitation from these sources. All of these indicators sometimes lead people to mistakenly assume that natural waters are safe to drink. Giardia may or may not be present, but you should be aware of possible danger.

The Disease—Symptoms and Treatment

Although giardiasis can be incapacitating, it is not usually life threatening. After ingestion by humans, giardia normally attach themselves to the small intestine.

Disease symptoms usually include diarrhea, increased gas, loss of appetite, abdominal cramps, and bloating. Weight loss may occur from nausea and loss of appetite. These discomforts may first appear a few days to a few weeks after ingestion of giardia, and may last up to 6 weeks. Most people are unaware that they have been infected and have often returned home from vacations before the onset of symptoms. If not treated, the symptoms may disappear on their own, only to recur intermittently over a period of many months. Other diseases can have similar symptoms, but if you have drunk untreated water you should suspect giardiasis and so inform your doctor. With proper diagnosis the disease is curable with medication prescribed by a physician.

If you think you might not remember the word "giardiasis," save this brochure to show to your doctor. However, you can take steps to avoid the problem, so a visit to your doctor will not be needed.